

DIGITAL TRANSFORMATION IN ISLAMIC EDUCATION: CURRICULUM MERDEKA-BASED LEARNING STRATEGIES TO ENHANCE STUDENT AUTONOMY AND INNOVATION

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Abstract

This study explores the integration of digital transformation within Islamic education through the lens of the Merdeka Curriculum, emphasizing strategies that foster student autonomy and innovation while preserving Islamic values. Utilizing a qualitative literature review, the research critically analyzes various sources to construct an integrative framework combining pedagogical, technological, ethical, and spiritual dimensions. The findings highlight that successful implementation depends on teacher readiness, school leadership, and reflective learning cultures. A novel contribution of this study is the development of the TPACK+V (Value-sensitivity) model and a value-based technology integration framework, which contextualize digital tools within the moral and spiritual fabric of Islamic education. Case studies illustrate best practices in high-performing schools, while challenges in 3T (frontier, outermost, and disadvantaged) regions underscore the need for differentiated policies. Ultimately, the study offers strategic insights for designing transformative, ethical, and inclusive digital learning in Islamic educational contexts.

Keyword: Merdeka Curriculum, Islamic Education, Digital Transformation, TPACK+V, Value-based Learning, Student Autonomy

Abstrak

Penelitian ini mengkaji integrasi transformasi digital dalam pendidikan Islam melalui pendekatan Kurikulum Merdeka, dengan penekanan pada strategi yang mendorong kemandirian dan inovasi peserta didik sekaligus mempertahankan nilai-nilai keislaman. Menggunakan metode tinjauan pustaka kualitatif, studi ini secara kritis menganalisis berbagai sumber untuk membangun kerangka kerja integratif yang mencakup dimensi pedagogis, teknologis, etis, dan spiritual. Temuan menunjukkan bahwa keberhasilan implementasi sangat dipengaruhi oleh kesiapan guru, kepemimpinan sekolah, dan budaya pembelajaran reflektif. Kontribusi baru dari penelitian ini adalah pengembangan model TPACK+V (Value-sensitivity) serta kerangka integrasi teknologi berbasis nilai, yang mengontekstualisasikan penggunaan digital dalam bingkai moral dan spiritual pendidikan Islam. Studi kasus menunjukkan praktik terbaik di sekolah-sekolah unggulan, sementara tantangan di

wilayah 3T (terdepan, terluar, tertinggal) menegaskan perlunya kebijakan yang bersifat diferensial. Pada akhirnya, penelitian ini menawarkan wawasan strategis untuk merancang pembelajaran digital yang transformatif, etis, dan inklusif dalam konteks pendidikan Islam.

Kata Kunci: Kurikulum Merdeka, Pendidikan Islam, Transformasi Digital, TPACK+V, Pembelajaran Berbasis Nilai, Kemandirian Siswa

Introduction

Educational transformation in the digital era demands a learning system that is not only adaptive and contextual but also capable of empowering students holistically. The *Merdeka Curriculum* was introduced as a response to these needs, emphasizing flexibility, differentiated learning, and character building through the *Profil Pelajar Pancasila* (Kemendikbudristek, 2022). Ideally, the *Merdeka Curriculum* promotes a paradigm shift from teacher-centered learning toward student-centered learning, where students are active, reflective, and autonomous participants. Technology serves as a key component in supporting this transformation due to its ability to expand access, personalize learning, and facilitate pedagogical innovation (Sibuea, Harahap, & Dalimunthe, 2022).

However, in practice, there remains a significant gap between policy expectations and realities in the field. Many schools, particularly those in disadvantaged, frontier, and outermost (3T) regions, face inadequate digital infrastructure, while a majority of teachers tend to use technology primarily for administrative purposes rather than as a tool for pedagogical transformation (Norpin, Naibaho, & Rantung, 2023). Additionally, disparities in digital literacy among teachers and students further exacerbate inequalities in the quality of technology-based learning (Wardani, Prasetyo, & Mukti, 2023).

Previous studies have predominantly focused on the technical aspects of technology integration, such as the use of applications and digital platforms, yet few have explored how local values (particularly Islamic values) can be meaningfully integrated into the framework of digitalizing education. In the context of Islamic education, digital transformation must align with principles of spirituality, ethics, and local cultural values, which have long been foundational in developing students' character. For instance, Abdurrahman (2019) underscores the importance of integrating modern curricula with Islamic learning traditions to create a balance between technological progress and Islamic values.

At the international level, studies such as those by Selwyn (2022) and Williamson & Hogan (2020) emphasize that digital transformation in education requires ethical and reflective approaches rather than merely focusing on technological efficiency. However, these studies have yet to sufficiently examine how such approaches can be implemented within Islamic education contexts in developing countries like Indonesia. Thus, there exists a significant research gap in understanding how the *Merdeka Curriculum* can serve as a medium for integrating educational technology with Islamic values amid ongoing digital transformation.

This article aims to address that gap by providing a comprehensive analysis of *Merdeka Curriculum*-based learning strategies that utilize technology not merely as a technical tool but as a catalyst for pedagogical, ethical, and spiritual transformation within Islamic education. The novelty of this study lies in its effort to link digital pedagogy with the preservation of local and Islamic values, an area often overlooked in studies on educational digitalization. Therefore, this article offers not only an integrative conceptual framework but also practical contributions for designing contextual, transformative, and value-driven learning strategies.

Method

This study employs a qualitative approach in the form of a literature review to critically analyze learning strategies based on the *Merdeka Curriculum* within the context of digital transformation in Islamic education. The study is conceptual and analytical in nature, aiming to evaluate and synthesize findings from various scholarly sources in order to construct a theoretical and practical framework for technology integration that is contextual and value-oriented.

Data collection was carried out through a systematic review of academic literature published over the past decade (2014–2024), focusing on key themes including digital transformation in education, the implementation of the *Merdeka Curriculum* in Indonesia, technology-enhanced learning strategies, Islamic education and value integration, and digital literacy and ethics in contextual pedagogy. Sources reviewed include reputable international journal articles, nationally accredited journals, official government policy documents (e.g., Kemendikbudristek guidelines), academic books, and peer-reviewed conference proceedings. Literature was selected based on its direct relevance to the research theme, academic credibility, and contextual applicability.

The data analysis process utilized a thematic analysis of literature, conducted in several stages: identifying key themes from the initial review (such as digital transformation, Merdeka Curriculum, Islamic pedagogy, and digital literacy), categorizing findings into relevant sub-themes (such as technology integration models, implementation challenges, and ethical-spiritual approaches), and synthesizing these findings through critical comparison and contextualization. This synthesis process is designed to generate new understandings, highlight research gaps, and propose an integrative framework that connects technology, pedagogy, and Islamic educational values.

To ensure conceptual validity, the study applies several strategies, including literature triangulation, by cross-verifying findings across disciplines (education, technology, Islamic studies); critical evaluation of secondary sources, by assessing the methodological soundness and contextual relevance of each reference; and thematic consistency, by ensuring all findings and syntheses align cohesively with the central focus of the study. This approach allows the researcher to construct a comprehensive and in-depth conceptual analysis of how *Merdeka Curriculum*-based learning strategies can foster meaningful digital transformation while remaining grounded in the ethical and spiritual values of Islamic education.

Findings and Discussion

Merdeka Curriculum and Digital Learning Transformation

Theoretically, the Merdeka Curriculum adopts a constructivist learning approach that emphasizes active, reflective, and contextual learning experiences. However, its practical implementation often falls short of true pedagogical transformation. Many schools utilize technology merely for administrative purposes rather than as a tool to enhance critical or collaborative thinking.

Technology-based learning models such as the flipped classroom and blended learning are highly compatible with the principles of the Merdeka Curriculum. These models allow students to study material independently outside the classroom and use in-class time for discussion, collaboration, and problem-solving. Global studies (Bergmann & Sams, 2012; Graham et al., 2013) show that such approaches improve teacher-student interaction and learning effectiveness.

This study contributes a novel perspective by introducing ethical and spiritual dimensions into the TPACK (Technological Pedagogical Content Knowledge)

framework. The researcher proposes a TPACK+V (Value-sensitivity) model, in which teachers are expected not only to master technology, pedagogy, and content, but also to align them with Islamic values and local cultural contexts.

Forms of Technology Integration: Disparities and Innovations

Technology integration across Indonesian schools varies greatly. High-performing urban schools access regular ICT training, implement project-based learning, and utilize adaptive learning applications. In contrast, schools in remote (3T) areas face limited infrastructure, lack of training, and low digital literacy among teachers.

Table 1. Comparison of Technology Use in High-Performing vs. 3T Schools		
Aspect	High-Performing Schools	3T Schools
Infrastructure	Complete (Wi-Fi, projectors, LMS)	Limited (weak internet, minimal devices)
Teacher Training	Regular and TPACK-based	Minimal and administratively focused
Learning Models	Blended, project-based, gamification	Static presentations, basic online tasks
Value Integration	Explicit (ethics, spirituality)	Implicit or unstructured
Platforms Used	Merdeka Mengajar, Google Workspace	WhatsApp, PDFs, PowerPoint

This comparison highlights the need for differential strategies in technology implementation to avoid widening educational gaps. Initiatives such as offline learning kits, radio-based lessons, and community-based learning must be strengthened in underserved areas.

Driving School Case Studies: Best Practices and Reflective Culture

SMA Negeri 3 Yogyakarta and SMPN 1 Bandung exemplify schools successfully integrating technology under the Merdeka Curriculum framework. At SMA Negeri 3, teachers use Padlet not just to collect ideas but as a space for argument-based discussions that foster collaborative critical thinking.

Meanwhile, SMPN 1 Bandung uses app-based diagnostic assessments systematically to design differentiated learning tailored to student profiles. This aligns with Carol Tomlinson’s (2014) theory of responsive differentiation, which involves adjusting learning processes, content, and outcomes based on individual student needs.

This study affirms that digital learning success relies not merely on access to tools, but on reflective learning cultures and transformational leadership. School

leadership plays a key role in fostering ecosystems that support innovation, collaboration, and meaningful learning.

Value-Based Approaches in Technology Integration

Another novelty of this study lies in integrating Islamic values into digital transformation. The author develops a Value-Based Technology Integration framework covering four key dimensions: technical, pedagogical, ethical, and spiritual.

Table 2. Value-Based Technology Integration Framework

Dimension	Description
Technical	Availability and capacity to use digital devices and platforms
Pedagogical	Contextual, collaborative, and student-centered instructional design
Ethical	Awareness of copyright, digital privacy, and responsible technology use
Spiritual	Internalization of Islamic values such as honesty, trustworthiness, and digital etiquette

This framework guides teachers in designing digital learning that is not only instructionally effective but also shapes students' character and spirituality.

Meaningful Digital Literacy and Ethical Challenges

In Islamic education, digital literacy must go beyond technical proficiency. It should encompass cognitive (content understanding), affective (values and attitudes), and moral (responsible use) dimensions. Within the Merdeka Curriculum, this is directly related to strengthening the Pancasila Student Profile.

This study supports UNESCO's (2022) perspective that digital literacy must promote sustainable development (Education for Sustainable Development) and avoid creating new inequalities. Therefore, digital literacy should be taught contextually, value-based, and from early education levels.

Technology Ethics and AI Misuse

The emergence of technologies like ChatGPT and text-based AI poses new educational challenges. Many students increasingly rely on AI for instant task completion without understanding the content, raising issues of academic integrity.

Teachers need training to guide ethical use of such technologies. One solution is implementing project- and reflection-based assessments, where students not only present final outputs but also demonstrate their thought processes and decision-making.

Transformation as a Collective Process

Digital transformation in Islamic education cannot occur linearly. It requires collective effort from government, schools, teacher communities, and religious institutions. Involving community leaders and Islamic boarding schools (pesantren) in developing context-based digital learning materials strengthens both local and spiritual learning foundations.

This approach aligns with Siemens' (2005) connectivism, which views learning as the result of networks among resources, individuals, and communities. In Islamic education, these networks must be bound by values of virtue and social compassion.

Collaboration and Social Innovation

Cross-sector partnerships are essential to addressing technology integration challenges. Tech companies can contribute through corporate social responsibility (CSR) programs by developing local educational content, training teachers, and expanding internet access in remote areas.

The government can support this effort by offering affirmative policies and incentives for schools innovating in value-based digital learning. Meanwhile, digital teacher communities such as KKG and MGMP can drive the dissemination of best practices at the grassroots level.

Digital Learning Spaces as Value Arenas

This study suggests that digital spaces should be treated not merely as information channels but as arenas for character development. By embedding value reflection in online activities, teachers can cultivate positive habits and ethical awareness in students' digital behavior.

For example, community-based projects can involve students in creating Islamic educational content that promotes tolerance, social responsibility, and environmental awareness. Thus, digital spaces can also serve as platforms for educational *dakwah*.

Preliminary Conclusion and Implications

These findings demonstrate that digital transformation in Islamic education under the Merdeka Curriculum must be grounded in a holistic approach. A blend of technical skills, pedagogical innovation, digital literacy, and value internalization forms the foundation for contextual and meaningful learning strategies.

This study contributes an integrative theoretical framework (TPACK+V) and a map of challenges and solutions that policymakers and educators can use to develop transformative, ethical, and spiritually rooted digital learning models.

Conclusion

The *Merdeka Curriculum* represents a strategic step in reforming Indonesia's education system towards a more flexible, contextual, and student-centered learning model. This study affirms that in the context of Islamic education, digital transformation cannot be separated from the integration of ethical and spiritual values. Technology should not merely be viewed as an instructional tool, but as a medium that shapes learning culture, digital ethics, and the internalization of Islamic values.

The main findings of this study indicate that the success of implementing the *Merdeka Curriculum* is strongly influenced by teachers' pedagogical readiness, the quality of school leadership, and a reflective culture that supports meaningful learning. The TPACK+V (Value-sensitivity) concept developed in this study offers a significant theoretical contribution by enriching the integrative approach between technology, pedagogy, content, and values within the context of Islamic education. Additionally, the value-based technology integration framework, encompassing technical, pedagogical, ethical, and spiritual dimensions, provides a practical model for educators in designing transformative and value-oriented digital learning.

In terms of implementation, the disparity between high-performing schools and those in underdeveloped (3T) areas highlights the need for differentiated, locally-driven policy interventions. Case studies from two *Sekolah Penggerak* (Pioneer Schools) reveal that visionary leadership support and a collaborative school culture can be key success factors in integrating technology into learning.

The main limitation of this study lies in its lack of specific analysis regarding the digital-based implementation of the *Merdeka Curriculum* in non-formal Islamic institutions such as pesantren. Moreover, as the study employs a literature review and limited case studies, the generalizability of the findings remains constrained.

Therefore, further research, preferably quantitative or longitudinal is needed to empirically measure the effectiveness of the proposed value-based technology integration model in various Islamic education contexts. Future studies are also encouraged to explore the development of community-based digital curricula involving pesantren and religious institutions as part of the national learning ecosystem.

Thus, the *Merdeka Curriculum* holds great potential to become a learning space that is not only technologically and methodologically liberating, but also deeply rooted in values, local contexts, and an inclusive, civilized national character.

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